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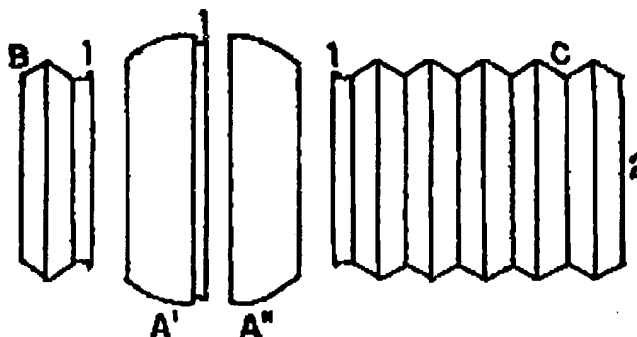
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(54) Title: DUST COLLECTOR FOR ELECTRIC DRILLS

(57) Abstract

Dust collector for electric drills characterized by having a bellows (C) of plastic, or similar stuff, attached to a transparent plastic container (A) that functions in order to retain dust and fragments originating from perforations made in materials bored by electric drills and similar tools, and also characterized by having in its front part a small ring folded like an accordion (B) that functions in order to provide better sealing between the dust collector and the surface to be bored. This dust collector could be made in one piece or in separate parts that fit one into each other, by fitting, gluing, or by screw thread.



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"DUST COLLECTOR FOR ELECTRIC DRILLS"

The following Patent of Utility Model consists of a container of transparent plastic, or similar, that functions in order to collect and deposit dust and fragments originating from perforations made in surfaces by electric drills, or by
5 electric/pneumatic hammer drills, of domestic usage or not.

Nowadays the dust and the fragments of such perforations are usually not collected, they scatter through the room where the bore is made. The larger fragments fall on the floor and the dust is scattered to the air and deposited some meters away from the place where the bore is made. A popular way used
10 to reduce this problem is to fix a paper envelope on the wall right bellow the bore, however this procedure has some inconvenience, besides not collecting the dust on the air.

Taking into account such problem, it was designed the present collector that consists of a container of transparent plastic stuff with a suitable
15 shape, and two bellows of rubber, or similar stuff, with specific purpose that will be detailed later on.

The idea can be better understood when we analyze the annexed drawings.

Figure 1 shows a front view of the collector.

20 Figure 2 represents a side view of the collector.

Figure 3 shows an exploded view of the object.

As we can see by figures 1 and 2, we have a container to collect residues made of rigid and transparent plastic stuff (A) that has a hole in its front side. This container must be made of transparent plastic material in order the
25 surface being bored could be viewed. On this hole is fit in a short and hollow bellows (a ring folded like an accordion) (B), made of flexible stuff (polyethylene, rubber or similar), which works to provide a better sealing contact between the dust collector and the surface to be bored.

At the other end of the container A, we find another hole where another
30 hollow bellows (a tube folded like an accordion) (C), longer than the first one, fits in. This bellows works allowing the drawing in and out of the device, in order it can go along with the movement of the drill penetrating the surface, and also fitting the dust collector for use with different drill sizes.

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Figure 3 shows in detail each one of these parts. Here we can see that, due to differences in stuff and processes needed to the manufacturing, the device is a set up of 4 parts that fit one into each other through grooves (1). These fittings could in the future use a system of screw-threading or even gluing without changing the character of novelty of the device. All parts have circular section and are hollow inside in order the drill can pass through them.

In this way, the small bellows (B) fits in the front part of the collector container (A'), that, in turn, fits in the back part (A'') and, at last, this set up of 3 parts fits in the large bellows (C). The back part 2 (Figures 1, 2, and 3) of this large bellows is shaped in a way that there is a narrowing up to the minimum diameter needed in order the shaft that holds the drill (mandrel) can pass through it. This narrowing functions in order to avoid the dust to leak by the back side of the device.

There is also the possibility of manufacturing the present dust collector with less fittings, once, depending on the processes needed to the manufacturing, it could be made in one piece only. Therefore, the basis of the idea is the presence of a bellows, or tube folded like an accordion, attached to a transparent plastic container that functions retaining fragments, as shown in Figure 2.

Once the dust collector is manufactured, whether in a set up of separated parts or in one piece only, its operation is simple: the dust collector is placed covering the rotary set up of mandrel and drill. The small bellows should stand in the same level as the edge of the drill.

When we use the electric drill, the dust collector will stand between the wall to be bored and the body of the electric drill, with the small bellows standing against the surface to be bored. As the drill perforates the surface, the large bellows draws in. As we finish the boring and remove the drill, the large bellows will draw out again. In this way, the greater part of the residue originating from the perforation will be collected by the transparent container (A).

After use the dust collector can be removed from the electric drill, for its cleaning.

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CLAIMS

1 "DUST COLLECTOR FOR ELECTRIC DRILLS", as explained in the
annexed description, characterized by having a bellows (C) of plastic, or similar
stuff, attached to a transparent container (A) that functions in order to retain
5 dust and fragments originating from perforations made in materials bored by
electric drills and similar tools.

2 "DUST COLLECTOR FOR ELECTRIC DRILLS", characterized by
having in its front part a small ring folded like an accordion (B) that functions in
order to provide better sealing between the dust collector and the surface to be
10 bored.

3 "DUST COLLECTOR FOR ELECTRIC DRILLS", characterized by the
possibility to be made in one piece or in separate parts that fit one into each
other by fitting, gluing, or by screw thread.

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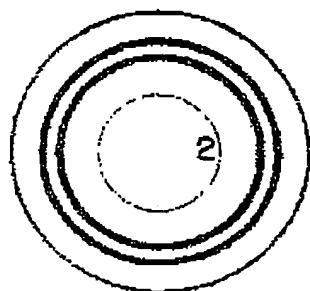


FIG. 1

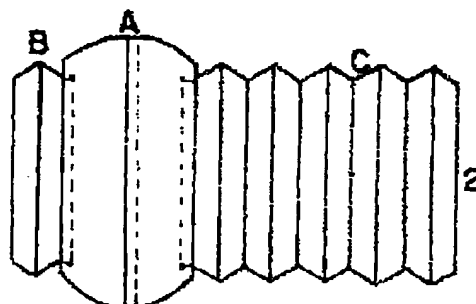


FIG. 2

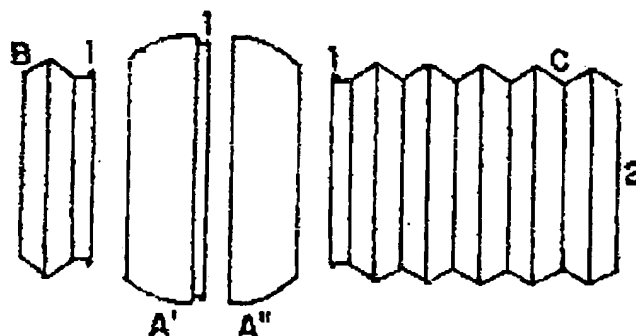


FIG. 3